

## **Department of Energy**

Richland Operations Office P.O. Box 550 Richland, Washington 99352

## OCT 0 1 1996

Mr. Steve M. Alexander Perimeter Area Section Manager State of Washington Department of Ecology 1315 West Fourth Avenue Kennewick, Washington 99336

Mr. Douglas R. Sherwood Hanford Project Manager U.S. Environmental Protection Agency 712 Swift Boulevard, Suite 5 Richland, Washington 99352



Terfrex M. Bruggeman, Project Manager Decontamination and Decommissioning Project

Dear Messrs. Alexander and Sherwood:

ENGINEERING EVALUATION/COST ANALYSIS FOR THE 100-B/C ANCILLARY FACILITIES, THE 108-F BUILDING AND THE FINAL DISPOSITION OF WASTE GENERATED DURING 105-C REACTOR SAFE STORAGE ACTIVITIES

Enclosed for your review is the Decisional Draft, DOE/RL 96-85, Engineering Evaluation/Cost Analysis (EE/CA) for the 100-B/C Area Ancillary Facilities, the 108-F Building, and the Final Disposition of Waste Generated During 105-C Reactor Safe Storage Activities. Also enclosed for review, is the Decontamination and Decommissioning of 100 Area Ancillary Buildings Community Relations Plan, and the draft Strategy for Conducting Decommissioning Activities under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at the Hanford Site.

Should you have any questions during your review, please contact me on 376-7121.

Sincerely,

DDP:JMB

Enclosures

cc w/encls:

J. W. Donnelly, Ecology

D. A. Faulk, EPA

P. R. Beaver, EPA

cc w/o encls:

J. E. Rugg, BHI

## D&D OF 100 AREA ANCILLARY BUILDINGS COMMUNITY RELATIONS PLAN

## I. OVERVIEW

This plan outlines public involvement activities that will be conducted during decommissioning of 100 Area ancillary buildings on the Hanford site. Decommissioning will be conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as non-time critical removal actions unless it is determined that remedial action is necessary due to the level of risk to human health or the environment. Additional actions will be pursued for the 200, 300, and 1100 Areas. Community relations plans will be prepared as appropriate for each given action.

## II. PUBLIC INVOLVEMENT PLANNING

This community relations plan outlines the strategy to be used to provide information to the public during removal actions, and for remedial actions if required, as set forth in the Engineering Evaluation/Cost Analysis (EE/CA), or other similar document for remedial actions (i.e., Focused Feasibility Study). Throughout the public involvement process, decision-making is the responsibility of all three agencies -- the U.S. Department of Energy, Richland Operations Office (DOE-RL), the U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology); however, DOE-RL retains the right to exercise lead agency authority for removal actions.

## Actions to be taken during Removal Action:

- Update the Environmental Restoration Committee on the project progress; the Environmental Restoration Committee will provide this information to the Hanford Advisory Board. (May or June 1996)
- Provide government-to-government consultation with the Native American Tribes. (May June 1996)
- Presentation to Natural Resource Trustees. (May June 1996)
- Announce EE/CA in Federal Register and local newspaper. (Prior to placing document in Information Repositories and opening public comment period)
- Information for the general public. (Hanford Update articles will announce comment period if publication date can be coordinated; Hanford Reach articles quarterly update once work begins)

- A meeting (public, information exchange, etc.) if requested by the public.
   (During public comment period)
- Prepare a fact sheet to describe the EE/CA and announce public comment period. (Prior to placing EE/CA in information repository)

## Actions to be taken during Remedial Action:

- Update the Environmental Restoration Committee; the Environmental Restoration Committee will provide this information to the Hanford Advisory Board.
- Provide government-to-government consultation with the Native American Tribes.
- Presentation to Natural Resource Trustees on system and mitigation plan.
- Prepare a fact sheet to describe the remedial action (include as an insert in the Hanford Update).
- Information for the general public. (Hanford Update articles, Hanford Reach articles; press release in local paper)

# STRATEGY FOR CONDUCTING DECOMMISSIONING ACTIVITIES UNDER CERCLA AT THE HANFORD SITE

#### I. INTRODUCTION/PURPOSE

This document presents the purpose and strategy for implementing decommissioning activities (surveillance and maintenance [S&M] phase and disposition phase) under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at the Hanford site. There are two basic purposes for presenting this strategy. First, the U.S. Department of Energy (DOE), Richland Operations Office (RL) must implement the existing joint national U.S. Environmental Protection Agency (EPA)/DOE policy on conducting decommissioning under CERCLA. Second, RL, Environmental Restoration (ER) Program has been evaluating how best to provide for adequate hazard analyses and safety and environmental safeguards for DOE ER Program work. A basic principle of CERCLA is that risks to the public, worker, and the environment are assessed and mitigated to acceptable levels. If CERCLA is properly implemented, it is likely that some of the requirements posed by DOE Orders and regulations would be redundant.

#### II. SCOPE

RL proposes to implement the S&M phase and disposition phase of decommissioning under CERCLA for all facilities addressed by the ER program (excluding Resource Conservation and Recovery Act treatment, storage, and disposal units and non-contaminated buildings). It is proposed that these facilities be organized into three categories ("Key", "Of Interest", and "Other"), based on the potential threat of release and magnitude of potential release to the environment; for the purpose of determining the level of involvement of regulatory agencies including EPA, DOE, and the Washington State Department of Ecology (Ecology) and the level of detail provided by the CERCLA process. Buildings listed under the "Key" category will be identified in accordance with the criteria specified in section 8.1.2 of the Tri-Party Agreement (TPA). Buildings in the "Of Interest" category can be identified based on the level of risk posed by the facility that does not classify as a "Key" facility, but poses enough risk to warrant significant involvement from regulatory agencies and stakeholders. "Of Interest" facilities are considered to contain complex decontamination issues. "Other" facilities are those facilities that do not present a significant risk by virtue of certain characteristics (e.g., the degree of containment provided by the facility, low potential for release due to presence of fixed contamination, etc.). "Other" facilities also would not present the level of complexity for decontamination that facilities "Of Interest" present. The following table provides a suggested list of facilities in the ER program organized by the categories described above.

## "KEY" FACILITIES

Currently there are no only the 224-U (UO<sub>3</sub> Plant Concentration Building) and the 224-Ua (UO<sub>3</sub> Calcination and Loadout Building) facilities identified in the ER program that are considered "Key" facilities. However, there are additional facilities that will be transferred into the ER program as "Key" facilities including: PUREX and B-PLANT (Please note that there may be facilities identified in the "Of Interest" category that EPA and/or Ecology may prefer to include under the "Key" facility category).

## "OF INTEREST" FACILITIES

See Table 1.

Table 1. "Of Interest" Facilities.

AREA	BUILDING NUMBER	BUILDING NAME
100 AREAS	105-B* 105-C* 105-D* 105-DR* 105-F* 105-H* 105-KE* 105-KU* 105-N 107-N 109-N 1310-N	Reactor Building Reactor Building and Fuel Storage Basin Reactor Building Reactor Building Reactor Building Reactor Building Reactor Building and Fuel Storage Basin Basin Recirculation Facility Heat Exchange Building Radioactive Liquid and Waste Treatment Facility
200 AREAS	224-B 202-S 233-S 221-U 241-Wr	Plutonium Concentration Building Redox Plutonium Concentration Building Canyon Building (U-Plant) Vault (Thorium Storage)
Pending Transfers To Er	231-Z 308 309	Plutonium Lab Plutonium Lab Plutonium Recycle Test Reactor

<sup>\*</sup>Scope for Surplus Production Reactor Buildings only includes S&M and disposal of waste generated during interim safe storage activities.

## "Other" Facilities

See Table 2.

Table 2. "Other" Facilities.

Area	Building Number	Building Name
100-B AREA	100-B 103-B 104-B-1 104-B-2 111-B 116-B 119-B 1608-B 1701-BA 1904-B-1 1904-B-2	Riverlines (2) Unirradiated Fuel Storage Tritium Vault Tritium Laboratory Decontamination Station (foundation, floor and waste tank remaining) Reactor Exhaust Stack Exhaust Air Sample Building Vacuum Seal House Exclusion Area Badge House Outfall Structure Outfall Structure
100-C AREA	100-C 105-C 105-C 118-C-4 183-C 190-C 1702-C	Riverlines (2) Water Tunnels High Tanks (2) Horizontal Control Rod Storage Cave Filter Plant Main Pumphouse Badge House Solvent House
100-D AREA	100-D 103-D 105-D 116-D 195-D 1724-D 1734-D 1904-D	Riverlines (2) Unirradiated Fuel Element Storage Building  Water Tunnels Reactor Exhaust Stack Ball Drop Test Tower Underwater Test Facility Bottle Rack Building Outfall Structure
100-DR AREA	100-DR 105-DR 190-DR 1608-DR	Riverline (1) Water Tunnels Main Pumphouse - w/ N&S Annex Waste Water Pumping Station (foundation and below grade structure remain)
100-F AREA		Riverlines (2) Biology Laboratory Building Waste Water Pumping Station (foundation and below grade structure remain) West Clearwell

Table 2. "Other" Facilities.

Area	Building Number	Building Name
100-H	100-H	Riverlines (2)
AREA	183-H	West Clearwell
	1713-H	Warehouse
	1720-HA	Arsenal
100-K	100-K	Riverlines (2)
AREA	167-K	Crosstie Tunnel Building
	182-K	Emergency Water Reservoir Pumphouse
	183-K	Water Tunnels
	1720-K	Administrative Office Building
	1908-K	Outfall Structure
	105-KE	Water Tunnels
	110-KE	Gas Storage Facility
	115-KE	Gas Recirculation Building
	116-KE	Exhaust Air Stack
	117-KE	Exhaust Air Filter Building
	118-KE-2	Horizontal Control Rod Storage Cave
	150-KE	Heat Recovery Station
	166-KE	Oil Storage Vault
	1713-KER	Warehouse
	105-KW	Water Tunnels
	110-KW	Gas Storage Facility
	115-KW ~	Gas Recirculation Building
İ	116-KW	Reactor Exhaust Stack
	117-KW	Exhaust Air Filter Building
	118-KW-2	Horizontal Control Rod Storage Cave
į	119-KW	Exhaust Air Sample Building
	150-KW	Heat Recovery Station
	165-KW	Power Control Building
	166-KW	Oil Storage Vault
	181-KW	River Pumphouse
1	183-KW	Filter Plant
	190-KW	Process Water Pumphouse

Table 2. "Other" Facilities.

AREA	BUILDING NUMBER	BUILDING NAME
100-N	100-N	Riverline (1)
AREA	11-N	Change Room
ļ	13-N	Storage Building
ĺ	104-N	Storage Building
f	105-NA	Emergency Diesel Enclosure
ļ.	105-NB	Maintenance Building Addition
	105-NC	Emergency Diesel Generator
	105-ND	Remote Air Intake
	105-NE	Fission Products Trap
	108-N	Chemical Unloading Facility
	109-NA	Steam and Flow Instrument Building
	109-NB	Hydro Power Unit Building
	116-N	Air Stack
	117-N	Air Filter Building
	117-NVH	Valve Control House
	119-N	Air Sampling Monitor
	119-NA	Air Sampling and Monitoring
	151-N	230KV Electrical Substation
	153-N	Switchgear Building
	163-N	Demineralizer Plant
	166-N	Oil Storage Building
	181-N	River Water Pumphouse
	181-NA	Pumphouse/Guard Tower
	181-NB	#3 Diesel Enclosure
i	181-NC	Sample Station/Skid Station
	182-N	High Lift Pumphouse
Ī	183-N	Water Filter Plant
ļ	183-NA .	Pumphouse
İ	183-NB	Clearwell
	183-NC	Filter Backwash Sump
i	183-ND	Clearwell Overflow Pond
	184-N	Power House

Table 2. "Other" Facilities.

AREA	BUILDING NUMBER	BUILDING NAME
100-N	184-NA	Power House Annex Building
AREA	184-NB	Air Handler Main Building
CONT.	184-NC	Air Handler Annex Facility
J	184-ND	Fuel/Diesel Oil Day Tanks
<b>i</b> .	184-NE	Compressor Shed
<b>!</b> .	184-NF	Chemical Injection House
l .	1112-N	Guard Station/WHC Telecommunications Hub
1	1112-NB	Badge House (SEA)
	1120-N	Training Building
	1134-NA	Motor Generator (Line Conditioner)
	1143-N	Carpenter/Paint Shop
	1300-N	Emergency Dump Basin
	1303-N	Radioactive Dummy Burial Facility
	1304-N	Emergency Dump Tank
	1312-N	Liquid Effluent Retention Facility
	1313-N	Change and Control Room
1	1314-N	Liquid Disposal Building
	1315-N	Diversion System Valve House
1	1316-N	Valve House
1	1316-NA	Valve Vault
	1316-NB	Crib Effluent Iodine Monitoring Facility
	131,6-NC	Turbine Meter Vault
i.	1322-N	Waste Treatment Pilot Facility
	1322-NA	Effluent Water Pilot Plant
1	1322-NB	Crib Effluent Iodine Monitoring Facility
	1322-NC	Turbine Meter Vault
	1327-N	Diversion Valve House
1	1702-N .	Vehicle Inspection Building
	1705-N	Instrument and Electrical Facility
· .	1705-NA	Maintenance Shop Annex
	1706-N	Storage Building/Maintenance Shop
	1706-NA	Sewer Lift Station
	1707-N	Boat House
	1712-N	Insulation Shop

Table 2. "Other" Facilities.

AREA	BUILDING NUMBER	BUILDING NAME
100-N AREA CONT.	1714-N 1714-NA 1714-NB 1715-N 1722-N 1723-NX 1723-NX 1734-N 1802-NE 1900-N 1903-N 1904-NA 1904-NB 1904-NC 1908-N	Warehouse Warehouse Warehouse Oil Tanks Decontamination Shop Contaminated Equipment Storage Building Laydown Storage Yard Gas Bottle Storage Pipe Trestle Water Supply Tanks Old Septic System Sewage Lift Station #1 Sewage Lift Station #2 Sewage Lift Station #3 Outfall Structure
200 AREA	205-A 241-A-431 215-C 241-C-801 276-C 207-S 211-S 233-SA 241-SX-401 241-SX-402 276-S	Silica Gel Facility Tank Farm Ventilation Building Gas Preparation Facility Cesium Loadout Facility Solvent Handling Facility Water Retention Basin (backfilled with soil) Bulk Storage Aqueous Chemical Make-up Tanks Exhaust Filter Building Waste Disposal Condenser House N. Waste Disposal Condenser House S. Solvent Handling Facility

Table 2. "Other" Facilities.

AREA	BUILDING NUMBER	BUILDING NAME	
200 AREA	291-S 291-S-1 292-S 293-S 296-S-1 296-S-2 296-S-4 296-S-6 296-S-7 296-S-7 296-S-12 2706-S 2710-S 2711-S 2715-S 2718-S 2904-SA 241-SX-401 241-SX-402 207-U 207-U 211-UA 203-U 203-UX 271-U 272-U 276-U 291-U-1 291-U-1	Exhaust Fan House and Control Stack Stack Valve Pit House Offgas Treatment Facility Stack Stack Stack Stack Stack E. Stack W. Stack Stacks Storage Building Inert Gas Preparation Building Stack Gas Monitoring Station Oil Storage Building Sand Filter Sampler Monitoring Station Cooling Water Sampling Building Waste Disposal Condenser House N. Waste Disposal Condenser House S. Retention Basin Sample Shack Bulk Storage Aqueous Chemical Make-up Tanks Tank Farm (6 tanks, Pump Pit 307 and UNH Truck Pad) Uranium Storage Tank Enclosure Concentrated Uranium Storage Tank Enclosure Office Building Hot Shop/Cold Shop Solvent Recovery Exhaust Fan Control House, Sand Filter and Vessel Vent Pit Stack Stack	
200 AREA	292-U 2715-U 2715-UA 2716-U 232-Z	Stack Monitoring Station Oil Storage Shed Insulator Shop/adjacent Waste Shed Fire Protection Shed Waste Incinerator Facility	
600 AREA	212-N 212-R	Storage Building Storage Building	

#### III. BACKGROUND

Hanford ER Program Work consists of characterization and remediation of past practice waste sites; development and application of innovative remediation technologies; deactivation, decontamination and decommissioning of inactive former reactors and production facilities; surveillance and maintenance of deactivated inactive facilities and contaminated waste sites; and closure of inactive hazardous waste treatment, storage and disposal facilities. The primary activity of the ER Program, characterization and remediation of past practice waste sites, includes field investigations, studies and analyses to define and quantify the nature and extent of radiological and chemical or other contamination as necessary to support the selection of cost effective remedial alternatives, and the design and implementation of the selected alternative.

CERCLA has been endorsed at the national level by DOE and EPA for conducting decommissioning. Efforts by DOE Headquarters and EPA Headquarters have recently culminated in the joint "Policy on Decommissioning Department of Energy Facilities Under CERCLA", dated May 22, 1995. The stated purpose of this Policy is to "develop an approach to decommissioning that ensures protection of worker and public health and the environment, that is consistent with CERCLA, that provides for stakeholder involvement, and that achieves risk reduction without unnecessary delay." The Policy states that it encourages streamlined decision making and builds on the goal of developing decisions that appropriately address the reduction of risk to human health and the environment as expeditiously as the law allows.

The Policy directs DOE contractors to "conduct decommissioning activities as non-time critical removal actions, unless the circumstances at the facility make it inappropriate." CERCLA removal actions are determined to be the appropriate path forward because they effectively integrate EPA oversight responsibility, DOE lead agency responsibility, and state and stakeholder participation. The Policy recognizes that at sites such as Hanford, the roles and authority of DOE, and EPA, and Ecology will be defined, in part, by the terms of an Interagency Agreement (here, the TPA). The Policy allows implementation of remedial or removal actions under CERCLA for facilities that present complicated risks to the environment (i.ē., "Key" and "Of Interest" facilities as described in this strategy).

At Hanford, ER Program Work is conducted pursuant to the requirements of CERCLA and the TPA. The TPA is a legally enforceable plan for accomplishing environmental restoration work at the Hanford Site, with specific provisions for oversight by the EPA and Ecology.

The Policy recognizes that CERCLA removal actions can include such activities as site security or control precautions to reduce access or migration, stabilization of structures or buildings, consolidation or removal of substances or structures, and any other actions DOE deems necessary to reduce risks or potential risks from a release or potential release of a hazardous substance.

In the Policy, DOE determines that CERCLA removal actions will provide the most appropriate level of analysis, oversight, public participation and flexibility to conduct decommissioning in a cost-effective manner that fully protects health and the environment. The Policy states that using its removal action authority will enable DOE to exercise the flexibility provided in CERCLA to reduce risks and achieve results without unnecessary expenditure or delay.

#### IV. APPROACH

In accordance with current DOE and EPA Headquarters policy, decommissioning can be undertaken by the ER Program as remedial actions for "Key" facilities and as removal actions for "Other" facilities under CERCLA. Facilities in the "Of Interest" category can be conducted as remedial or removal actions depending on the level of risk to human health and the environment and the complexity for conducting decontamination. Surveillance and maintenance of inactive facilities is conducted pursuant to the surveillance and maintenance plan being developed and adopted under requirements in the TPA.

RL is proposing to implement the S&M phase of decommissioning under CERCLA by means of the S&M plan required by section 8.0 of the TPA. This plan will encompass all three categories of buildings. The disposition phase of decommissioning is proposed to be implemented consistent with the TPA under CERCLA by following the remedial action process for "Key" buildings, the remedial or removal action process for facilities "Of Interest", and the removal action process for "Other" buildings.

#### A. S&M Phase \*

The S&M plan will include a definitive description of the types of facilities addressed, explicit definition of the scope of surveillance and maintenance activities to be performed, and a description of remaining operating systems and actions necessary to operate them. The plan will also include categorization of hazards by type and severity of risk and the likely results of taking no action (not doing S&M). In order to be consistent with CERCLA [promulgated under the National Contingency Plan (NCP) 40 CFR 300] the plan will provide identification of applicable or relevant and appropriate standards to perform the stated scope of work safely in the context of the identified hazards and risks, in pursuit of the goals of ensuring containment of contamination, maintaining the facilities in a safe and stable condition, and presenting no significant threats of releases that affect human health or the environment. Finally, the plan will identify actions necessary to mitigate risks and comply with all applicable or relevant and appropriate requirements (ARARs). RL will coordinate development of the final plan with EPA and Ecology. It is proposed that all three parties formally approve the plan through the TPA with EPA providing oversight of DOE S&M activities.

Implementation documents resulting from the issuance of the S&M plan will provide facility specific instructions for meeting the requirements of the plan. Implementation documents for "Key" facilities and facilities "Of Interest" will be submitted to EPA/Ecology for review.

The S&M plan, by identifying and evaluating hazards and actions required to mitigate such hazards, will allow a consistent approach for prioritization of future disposition of Hanford Site facilities.

## B. Disposition Phase

It is proposed that, consistent with section 8.0 of the TPA, final disposition of "Key" facilities be conducted under the NCP as remedial actions. EPA or Ecology will have lead agency authority for such actions with Ecology providing state oversight in accordance with the TPA. The level of detail provided in the required CERCLA documentation will be commensurate with the complexity of the facility (i.e., RI/FS does not have to be more than 50 pages of details for every decommissioning job). Implementing the disposition phase of decommissioning under CERCLA as a remedial action will provide a definitive line between disposition of "Key" and "Other" facilities to the public.

It is proposed that decommissioning of facilities in the "Of Interest" category retain the option of conducting the disposition phase as a remedial action or a removal action as jointly determined appropriate by the Tri-Party Agencies. It is necessary to retain this option for the following reasons.

- Although "Of Interest" facilities are not "Key" facilities as defined in the TPA, some "Of Interest" facilities will warrant a remedial action based on the level of complexity involved in decontamination and risk to human health and the environment similar to that presented by a "Key" facility.
- Some "Of Interest" facilities will not present a similar level of risk as that of a "Key" facility but will present a higher risk and level of complexity than buildings in the "Other" category. "Of Interest" facilities meeting this criteria can be managed as a removal action under EPA or Ecology as the lead regulatory agency with Ecology providing state oversight in accordance with the TPA.

"Other" facilities can be conducted under the NCP as removal actions. DOE will coordinate preparation of CERCLA documents with EPA and Ecology but will maintain lead agency authority. The existing community relations plan will be revised to include the decommissioning scope and all sampling and analysis plans developed in support of response action decisions will be submitted to EPA for approval.

Upon completion of disposition activities for "Other" buildings, verification sampling will be performed at the site. Verification sampling will be coordinated with the appropriate EPA or Ecology operable unit project manager. The scope of final disposition under D&D does not routinely include extensive soil remediation underneath buildings; therefore verification sampling, in coordination with the operable unit, will ensure that the area beneath a dispositioned building will be addressed as appropriate. RL is currently preparing a policy defining the process for coordinating such activities.

Conducting the final disposition phase of "Other" buildings under CERCLA as a removal action with DOE as lead agency will allow low risk facilities to continue to be dispositioned in an expedited manner; will improve the process by coordinating with regulatory agencies; and will ensure that hazards are managed in a manner protective of human health and the environment in compliance with the NCP and TPA.

The final disposition phase for all categories will include submittal of sampling and analysis plans for waste designation and verification sampling and design reports to the lead agency for approval in accordance with section 6.0 of the TPA.

## V. SUMMARY

The overall approach proposed for conducting decommissioning under CERCLA, including the S&M phase and the final disposition phase is consistent with the NCP, the TPA and the joint EPA/DOE headquarters policy on Decommissioning under CERCLA. The S&M phase shall be conducted pursuant to the approved S&M Plan that identifies and evaluates hazards and appropriate actions to mitigate those hazards. The S&M Plan is a TPA requirement that will allow coordination of D&D work with other cleanup work required by and prioritized under the TPA. Dispositioning phase work will be performed in accordance with the NCP and consistent with the TPA. DOE will take the lead to expedite cleanup at "Other" facilities through the removal action process. EPA or Ecology will take the lead for approving the proposed cleanup actions for "Key" facilities under the CERCLA remedial action process and for "Of Interest" facilities as remedial or removal actions.—In all-cases Ecology-will provide oversight from the state's perspective.—DOE, EPA and Ecology will jointly determine the categorization of facilities as "Key", "Of Interest", or "Other".